IN THE U.S. PATENT AND TRADEMARK OFFICE

Appellant:	Yang CAO
Application No.:	09/620,053
Art Unit:	2616
Filed:	July 20, 2000
Examiner:	Ian N. Moore
For:	APPARATUS AND METHOD FOR SYNCHRONOUS AND ASYNCHRONOUS SWITCHING OF INTERNET PROTOCOL TRAFFIC
Attorney Docket No.:	129250-00971/US

APPELLANT'S BRIEF ON APPEAL (Corrected)

MAIL STOP APPEAL BRIEF - PATENTS
Customer Service Window
Randolph Building
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Alexandria, VA 22314

December 15, 2006

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APPELLANT'S BRIEF ON APPEAL

I. REAL PARTY IN INTEREST:

The real party in interest in this appeal is Lucent Technologies Inc. Assignment of the application was submitted to the U.S. Patent and Trademark Office on July 20, 2000, and recorded at Reel 011018, Frame 0738.

II. RELATED APPEALS AND INTERFERENCES:

There are no known appeals or interferences that will affect, be directly affected by, or have a bearing on the Board's decision in this Appeal.

III. STATUS OF CLAIMS:

Claims 1-42 are pending in the application, with claims 1, 12, 28 and 33 being written in independent form.

Claims 11, 24, 32 and 39 were objected to, the Examiner stating the subject matter of these claims would be allowable if rewritten to include the features of their base independent claim and any intervening claims. Claims 1, 4, 12, 15, 28 and 33 were finally rejected based on obviousness-type double patenting. Further, claims 1-10, 12-23, 25-31, 33-38 and 40-42 remain finally rejected under 35 U.S.C. §103(a). Claims 1-42 are being appealed.

IV. STATUS OF AMENDMENTS:

A Request for Reconsideration ("Request") was filed on May 22, 2006. In an Advisory Action dated June 6, 2006 ("Advisory") the Examiner stated that the Request was considered and any amendments entered, but the request did not place the application in condition for allowance.

V. SUMMARY OF CLAIMED SUBJECT MATTER:

(i.) Overview of the Subject Matter of the Independent Claims

The invention relates to telecommunications systems and, more particularly, to the efficient switching of Internet Protocol (IP) traffic using circuit and packet switched fabrics, the packet switched fabrics including IP router switch fabrics and asynchronous transfer mode (ATM) switch fabrics.

Independent claim 1 reads as follows:

1. A hybrid telecommunications switch comprising:
at least one circuit switch fabric;
at least one packet switch fabric; and
a controller configured to route IP traffic to the circuit switch fabric or packet switch fabric, depending on an ATM service category of the IP traffic.

Support for claim 1 can be found, for example, at least on page 6, line 15 to page 7, line 2; page 8, lines 5-7; page 8, line 29 to page 9, line 2; page 9, lines 12-14; and page 11, line 24 to page 12, line 1 of the specification.

Independent claim 12 reads as follows:

12. A method for routing telecommunications traffic in a hybrid telecommunications switch comprising at least one packet switch fabric, at least one circuit switch fabric, and a controller, including the step of:
routing IP traffic to the circuit switch fabric or packet switch fabric, depending on an ATM service category of the IP traffic.

Support for claim 12 can be found, for example at least on page 6, line 15 to page 7, line 2; page 8, lines 5-7; page 8, line 29 to page 9, line 2; page 9, lines 12-14; and page 11, line 24 to page 12, line 1 of the specification.

Independent claim 28 reads as follows:

28. A hybrid telecommunications switch comprising:
at least one circuit switch fabric;
at least one packet switch fabric;
a controller configured to:
route IP traffic to the circuit switch fabric or packet switch fabric, depending on an ATM service category of the IP traffic;
allocate circuit switch fabric resources to traffic falling within an ATM service category; and
allocate available circuit switch resources, as indicated by a resource table, to received IP traffic requests.

Support for claim 28 can be found, for example, at least on page 6, line 15 to page 7, line 2; page 8, lines 5-7; page 8, line 29 to page 9, line 2; page 9, lines 12-14; page 11, line 24 to page 12, line 1; page 13, lines 3-4 and 10-12; and page 14, line 18 to page 15, line 2 of the specification.

Independent claim 33 reads as follows:

33. A method for routing telecommunications traffic in a hybrid telecommunications switch comprising at least one packet switch fabric, at least one circuit switch fabric, and a controller, including the step of:
routing IP traffic to the circuit switch fabric or packet switch fabric, depending on an ATM service category of the IP traffic;
provisioning a portion of the circuit switch fabric resources for circuit switched traffic;
allocating the remaining portion of the circuit switch fabric resources to IP traffic as a controller routes the IP traffic to the circuit switch fabric; and
allocating available circuit switch fabric resources, as indicated by a resource table, to IP traffic requests.

Support for claim 33 can be found at least on page 6, line 15 to page 7, line 2; page 8, lines 5-7; page 8, line 29 to page 9, line 2; page 9, lines 12-14; page 11, line 24 to page 12, line 1; page 13, lines 3-4 and 10-12; page 14, line 18 to page 15, line 2; page 15, lines 10-11; page 15, line 27 to page 16, line 3; and page 16, line 9 to page 20, line 5 of the specification.

In order to make the overview set forth above concise the disclosure that has been included, or referred to, above only represents a portion of the total disclosure set forth in the specification that supports the independent claims.

(ii.) Additional Text from the Specification in Support of the Claims

The Appellants note that there may be additional disclosure in the specification that also supports the independent and dependent claims. Further, by referring to the disclosure above the Appellants do not represent that this is the only evidence that supports the independent claims nor do Appellants necessarily represent that this disclosure can be used to fully interpret the claims of the present invention. Instead, this disclosure is an overview of the claimed subject matter.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL:

Appellant seeks the Board's review and reversal of the Examiner's rejection of claims 1, 4, 12, 15, 28 and 33 based on obviousness-type double patenting and claims 1-10, 12-23, 25-31, 33-38 and 40-42 under 35 U.S.C. §103(a).

VII. ARGUMENTS:

A. The Rejections

Claims 1, 4, 12, 15, 28 and 33 were rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 16, 28 and 35 of U.S. Patent No. 6,865,179 (the " '179 Patent") in view of U.S. Patent No. 6,330,239 to Suzuki ("Suzuki").

Claims 1 and 12 were rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,920,412 to Chang ("Chang '412") in view of U.S. Patent No. 6,657,757 to Chang et. al. ("Chang '757"). Further, the following additional rejections were made based on 35 U.S.C. 103(a) using a combination of Chang '412 and Chang '757 with additional references:

(i) claims 2, 3, 7, 13, 14, 28 and 33 based on Chang '412, Chang '757 and further in view of U.S. Patent No. 5,570,355 to Dail et. al ('Dail");

(ii) claims 4-6 and 15-17 based on Chang '412, Chang '757, Dail and yet further in view of U.S. Patent No. 6,574,224 to Brueckheimer ('Brueckheimer");

(iii) claims 8, 19, 29 and 34 based on Chang '412, Chang '757, Dail and yet further in view of U.S. Patent No. 5,982,771 to Caldara ("Caldara");

(iv) claims 9, 20-22, 25-27, 30, 35-37 and 40-42 based on Chang '412, Chang '757, Dail and yet further in view of U.S. Patent No. 5,832,197 to Houji ("Houji"); and

(v) claims 10, 23, 31 and 38 based on Chang '412, Chang '757, Dail Houji and Brueckheimer.

Applicants respectfully disagree for at least the following reasons.

B. <u>The Double Patenting rejections</u>

(i) Claims 1, 4, 12, 15, 28 and 33 are not the same scope as claims in the '179 Patent

To satisfy an obviousness-type double-patenting rejection the Examiner must demonstrate that rejected claims 1, 4, 12, 5, 28 and 33 are of the "same scope" as claims 1, 16, 28 and 35 in the '179 Patent. On their face the claims of the instant application and those of the '179 patent are not of the same scope. The instant claims are directed at *IP traffic* routing while those of the '179 Patent are directed at *ATM traffic* routing. Further, the instant claims include the feature of routing IP traffic *based on an ATM service category of the IP traffic.*

In the Final Office Action the Examiner appears to take the position that the scope of the rejected claims in the instant application are the same scope as claims in the '179 Patent because the words IP traffic in the claims can be replaced with the words ATM traffic from the claims in the '179 Patent. (see page 2, paragraph 2: "....routing IP traffic over ATM traffic [sic] or replacing ATM traffic with IP traffic is well known in the art...". Further, in the Advisory the Examiner states that the Appellant is "only arguing the words rather than the functionality associated with these words".

Rather than just "argue the words" (to paraphrase the Examiner) the Appellants have previously pointed out that ATM may be used to transmit information that may be formatted in any number of ways, not just IP. Thus, Appellant's believe their position is justified at this time.

(ii) Suzuki does not disclose or suggest the routing of IP formatted traffic using ATM service categories

Turning now to the rejection of claims 1, 4, 12, 15, 28 and 33 based on a combination of the '179 Patent and Suzuki, each of these claims recites, among other things, that IP traffic is routed to a circuit switch fabric or packet switch fabric depending on an ATM service category of the IP traffic.

Rather than disclose or suggest the routing of IP traffic based on ATM service categories, Suzuki appears to just disclose the known encapsulation of IP traffic and the use of an ATM transmission scheme. Again, while it may be true that encapsulating IP traffic within ATM was known by those skilled in the art, what was unknown until the advent of Appellant's invention was the routing of IP traffic to one of two different switch fabrics based on ATM service levels, a feature that is not disclosed in, nor suggested by, Suzuki. The Appellants respectfully submit that the Examiner appears to be minimizing the feature of the use of ATM service categories to route IP traffic.

Accordingly, Appellant respectfully requests that the members of the Board reverse the decision of the Examiner and allow claims 1, 4, 12, 15, 28 and 33.

C. The Claims Are Patentable Over Chang '412 And The Other References.

(i) The Deficiencies of Chang '412

Applicant respectfully submits that Chang '412 fails to teach or suggest: (i) the routing of IP traffic based on an ATM service category; (ii) at least one circuit switch and packet switch fabric making up a (iii) hybrid telecommunications switch as recited in claim 1 and similarly recited in claims 12, 28 and 33.

As admitted by the Examiner, Chang '412 is unrelated to IP traffic. Further, Applicant respectfully submits that the "type check 24" disclosed in Chang '412 determines whether an optical signal is an ATM or STM signal without taking into consideration the ATM *service level* of any of the traffic (see Chang '412, column 12, lines 13-14; 32-33; 53-54; and column 15, lines 25-52). In sum, Chang '412 does not disclose the routing of IP traffic based on an ATM service category as recited in claim 1 and similarly recited in claims 12, 28 and 33.

Next, though the Examiner appears to equate the "Optical Network Routing Apparatus (ONRA) 14d" of Chang '412 with the claimed hybrid telecommunications switch, this is inaccurate. The ONRA is a router, not a switch. Chang '412 itself uses the two words router and switch differently (see for example, "ONRA 14d", "ATM switch 10", and "STM Station or Switch 20" in Fig. 4.). In sum, Chang '412 does not disclose a hybrid telecommunications switch as recited in claim 1 and similarly recited in claims 12, 28 and 33.

Last, but not least, the Examiner appears to equate the "STM' and "ATM" add/drop multiplexers (ADMs) 28, 32 of Chang '412 with the claimed circuit

switch and packet switch fabrics. This too is inaccurate. An ADM is not a switch as is no doubt realized by the Examiner. Further, Chang '412 itself uses the two words ADM and switch differently (see for example, "STM ADM 28", "ATM ADM 32", "ATM switch 10", and "STM Station or Switch 20" in Fig. 4.). In sum, Chang '412 does not disclose a hybrid telecommunications switch that comprises a circuit switch fabric and packet switch fabric as recited in claim 1 and similarly recited in claims 12, 28 and 33.

(ii) The Other References Do Not Make Up for The Deficiencies of Chang '412

The Appellants respectfully submit that each of the remaining references does not make up for the deficiencies of Chang '412. Thus, Appellant submits that claims 1-10, 12-23, 25-31, 33-38 and 40-42 are patentable over Chang '412 taken separately, or in combination with any other additional reference(s), for the reasons set forth above.

Conclusion:

Appellant respectfully requests that the members of the Board reverse the Examiner's decisions rejecting claims 1-42 and allow these claims.

The Commissioner is authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 50-3777 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Respectfully submitted,

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VIII. CLAIMS APPENDIX

1. A hybrid telecommunications switch comprising:

at least one circuit switch fabric;

at least one packet switch fabric; and

a controller configured to route IP traffic to the circuit switch fabric or packet switch fabric, depending on an ATM service category of the IP traffic.

2. The switch of claim 1 wherein a portion of the circuit switch fabric resources are provisioned for circuit switched traffic and the remaining portion of the circuit switch fabric resources are allocated to IP traffic as the controller routes IP traffic to the circuit switch fabric.

3. The switch of claim 2 wherein the controller is further configured to allocate circuit switch fabric resources to traffic falling within an ATM service category.

4. The switch of claim 3 wherein the controller is further configured to route IP traffic associated with a constant bit rate (CBR) ATM service category to the circuit switch fabric.

5. The switch of claim 3 wherein the controller is further configured to route IP traffic associated with a real time variable bit rate (rt-VBR) ATM service category to the circuit switch fabric.

6. The switch of claim 3 wherein the controller is further configured to route IP traffic associated with an ATM service category which is neither CBR nor rt-VBR traffic to the IP switch fabric.

7. The switch of claim 3 wherein the controller is further configured to allocate available circuit switch resources, as indicated by a resource table, to received IP traffic requests.

8. The switch of claim 7 wherein the controller is further configured to maintain circuit switch ingress and egress resource tables.

9. The switch of claim 7 wherein the controller is further configured to pass an IP traffic request to a destination node and to establish an IP traffic path after having determined that all nodes along the proposed traffic path have accepted an IP traffic request.

10. The switch of claim 9 wherein the controller is further configured to determine whether IP traffic associated with the rt-VBR ATM service category is to be routed through the circuit switch fabric.

11. The switch of claim 10 wherein the controller is further configured to determine whether IP traffic associated with the rt-VBR ATM service category is to be routed through the circuit switch fabric based upon a peak to sustained packet rate ratio.

12. A method for routing telecommunications traffic in a hybrid telecommunications switch comprising at least one packet switch fabric, at least one circuit switch fabric, and a controller, including the step of:

routing IP traffic to the circuit switch fabric or packet switch fabric, depending on an ATM service category of the IP traffic.

13. The method of claim 12 further comprising the step of:

provisioning a portion of the circuit switch fabric resources for circuit switched traffic, and

allocating the remaining portion of the circuit switch fabric resources to IP traffic as a controller routes the IP traffic to the circuit switch fabric.

14. The method of claim 13 further comprising the step of:

allocating circuit switch fabric resources to IP traffic.

15. The method of claim 13 further comprising the step of:

routing IP traffic associated with a CBR ATM service category to the circuit switch fabric.

16. The method of claim 13 further comprising the step of:

routing IP traffic associated with an rt-VBR ATM service category to the circuit switch fabric.

17. The method of claim 13 further comprising the step of:

routing IP traffic not associated with the CBR or rt-VBR ATM service categories to the IP switch fabric.

18. The method of claim 13 further comprising the step of:

allocating available circuit switch fabric resources, as indicated by a resource table, to IP traffic requests.

19. The method of claim 13 further comprising the step of:

maintaining circuit switch ingress and egress resource tables.

20. The method of claim 13 further comprising the step of:

passing an IP traffic request to a destination node.

21. The method of claim 20 further comprising the step of:

determining that all nodes along the proposed IP traffic path have allocated circuit switch fabric resources for the IP traffic.

22. The method of claim 21 further comprising the step of:

establishing an IP traffic path after the determination step.

23. The method of claim 21 further comprising the step of:

determining whether IP traffic associated with the rt-VBR ATM service category is to be routed through an IP switch fabric or the circuit switch fabric, wherein the IP switch fabric is one kind of packet switched fabric.

24. The method of claim 23 further comprising the step of:

comparing a sustained packet ratio to a threshold value.

25. The switch of claim 9 wherein the controller is further configured to pass an IP traffic request to a destination node.

26. The switch of claim 9 wherein the controller is further configured to determine that all nodes along a proposed IP traffic path allocate circuit switch fabric resources for IP traffic.

27. The switch of claim 26 wherein the controller is further configured to establish an IP traffic path after determining that all nodes along a proposed IP traffic path allocate circuit switch fabric resources for IP traffic.

28. A hybrid telecommunications switch comprising:

at least one circuit switch fabric;

at least one packet switch fabric;

a controller configured to:

route IP traffic to the circuit switch fabric or packet switch fabric, depending on an ATM service category of the IP traffic;

allocate circuit switch fabric resources to traffic falling within an ATM service category; and

allocate available circuit switch resources, as indicated by a resource table, to received IP traffic requests.

29. The switch as in claim 28 wherein the controller is further configured to maintain circuit switch ingress and egress resource tables.

30. The switch as in claim 28 wherein the controller is further configured to pass an IP traffic request to a destination node and to establish an IP traffic path after having determined that all nodes along the proposed traffic path have accepted an IP traffic request.

31. The switch as in claim 30 wherein the controller is further configured to determine whether IP traffic associated with an rt-VBR ATM service category is to be routed through the circuit switch fabric.

32. The switch as in claim 31 wherein the controller is further configured to determine whether IP traffic associated with the rt-VBR ATM service category is to be routed through the circuit switch fabric based upon a peak to sustained packet rate ratio.

33. A method for routing telecommunications traffic in a hybrid telecommunications switch comprising at least one packet switch fabric, at least one circuit switch fabric, and a controller, including the step of:

routing IP traffic to the circuit switch fabric or packet switch fabric, depending on an ATM service category of the IP traffic;

provisioning a portion of the circuit switch fabric resources for circuit switched traffic;

allocating the remaining portion of the circuit switch fabric resources to IP traffic as a controller routes the IP traffic to the circuit switch fabric; and

allocating available circuit switch fabric resources, as indicated by a resource table, to IP traffic requests.

34. The method as in claim 33 further comprising the step of maintaining circuit switch ingress and egress resource tables.

35. The method as in claim 33 further comprising the step of passing an IP traffic request to a destination node.

36. The method as in claim 33 further comprising the step of determining that all nodes along the proposed IP traffic path have allocated circuit switch fabric resources for the IP traffic.

37. The method as in claim 36 further comprising the step of establishing an IP traffic path after the determination step.

38. The method as in claim 36 further comprising the step of determining whether IP traffic associated with an rt-VBR ATM service category is to be routed through an IP switch fabric or a circuit switch fabric.

39. The method as in claim 38 further comprising the step of comparing a sustained packet ratio to a threshold value.

40. The switch as in claim 30 wherein the controller is further configured to pass an IP traffic request to a destination node.

41. The switch as in claim 30 wherein the controller is further configured to determine that all nodes along a proposed IP traffic path allocate circuit switch fabric resources for IP traffic.

42. The switch as in claim 41 wherein the controller is further configured to establish an IP traffic path after determining that all nodes along a proposed IP traffic path allocate circuit switch fabric resources for IP traffic.

IX. EVIDENCE APPENDIX

None.

X. RELATED PROCEEDING APPENDIX

None.